

APPARATUS AND METHOD FOR MONITORING ALIGNMENT
OF A CNC MACHINE SPINDLE TRUNNION AXIS A

ABSTRACT

09/496249

The present invention provides a fixture,
system, and method for automatically and quickly
indicating a condition of a the trunnion axis A of a
computer numerically controlled (CNC) machine and
5 optionally an alert to a machine operator. The
fixture has a body preferably constructed of parallel
first and second walls and a third wall disposed
between, at right angles to, and connected to the
first and second walls all mounted on a base. First,
10 second, and third probe blocks are mounted on the
body at first, second, and third angular positions,
respectively, along an arc circumscribed by a radius
about an axis of rotation. The first, second, and
third blocks are mounted on an outer surface of one
15 of the first and second parallel walls, the outer
surface facing away from an other of the first and
second parallel walls. The blocks include preferably
co-planer respective first, second, and third flat
surfaces with respective normals parallel to the axis
20 of rotation. The first and second walls have first
and second recesses respectively in their unattached
ends. The recesses are preferably arcuate with edges
circumscribed about the axis of rotation. A spindle
mounted probe is mounted in a tool holder of a
25 spindle of the machine and a CNC controller is used
for moving and operating the spindle mounted probe.
Means are provided for and measuring, recording, and
displaying location data probed by the probe against
the flat surfaces. The means is effective to display

the location data as a deviation from baseline
measurements.